COMMENTS

Sweeping the E-Commerce Patent Minefield: The Need for a Workable Business Method Exception

William Krause*

I. INTRODUCTION: A SEATTLE DAYDREAM

Four friends, recent college graduates and lovers of fine micro-brewed beers, use youthful exuberance and computer science degrees to create a business model and the software necessary to make it a reality. Beer2U.com will actively seek out small brewers, catalogue their products, accept orders on-line, contact producers, and arrange shipments. The genius of this business model is the software itself: a computer algorithm monitors the flow of data through the processor and factors in the short life span of unpasteurized beers and the vagaries of shipping to different locations throughout the United States (the world is next year), creating a sliding scale of cost that accounts for the declining value of beers as they age and the increased shipping costs on rush orders. The software can pinpoint the cheapest possible way to get a six pack of stout from Bend, Oregon to Kearney, Nebraska. Producers are contacted, favorable contracts arranged, and, using leftover graduation money, the business goes on-line.

Everything goes well. Amazingly well. Six months into business the company is turning a steady profit and talking about an initial public offering (IPO). The brewers are happy because Beer2U.com has enlarged their market. Then, Beer2U.com receives a call from Budweiser. It seems two years ago Budweiser patented a distribution

* J.D. Candidate 2001, Seattle University School of Law; M.A. 1993, North Carolina State University; A.B. 1989, Lafayette College. The author wishes to thank Professor Gregory Silverman and Mary Jackson for reading drafts of this Comment and providing helpful insight. Much that is good about this Comment originated with their suggestions; all of the faults herein are directly attributable to the author.
system for its beer. Needing to keep a steady flow of cans marked with "born-on" dates, it created a software program to account for the "best within 110 days" factor and the vagaries of shipping and calculate an optimal price at which to sell to its distributors. Budweiser read about Beer2U.com in Wired Magazine and thinks the new company has infringed its patent. Budweiser wants licensing fees. Lots of licensing fees. Retroactive licensing fees. Further, it has retained heavy-hitting lawyers to squeeze the licensing fees out of Beer2U.com. Besides paying up or shutting down, the new company's only other option is to hire its own patent attorney and file for a declaratory judgment to invalidate the Budweiser patent. Unfortunately, a call to a patent lawyer will let Beer2U.com in on an awful truth: almost any method of doing electronic commerce is patentable.

This daydream is not terribly far-fetched. Although any computer-savvy person who wants to sell beer with a limited life span can write an original program to do so, this method—combining software with a computer to produce a tangible result of data—is patentable. Therefore, anyone else wishing to enter the field potentially faces licensing fees or litigation.

This Comment will suggest that, although innovation and technological creations need to be protected to encourage technological development, it is a mistake to grant patent protection for previously existing business methods. It should make no difference that these methods have been made available, via computer software, in the "new world" of the Internet. Extending patent protection to the "virtual" equivalents of business methods needlessly restricts the ability of businesses to develop in the electronic marketplace.

This Comment will trace the history of patent protection for methods of doing business over the past two decades, then it will inspect the problems that this protection has wrought: litigation, increased barriers to e-commerce entrepreneurs, and the threat of a less vibrant electronic marketplace. Because each traditional method of protecting intellectual property—patent, copyright, and trade secret—has strengths and limitations in protecting advancements in software technology, this Comment will examine the relative benefits of each method.

Finally, this Comment will suggest a simple, easily applied test that will offer patent protection to true innovations while reserving methods of doing business for the open market, as they are the building blocks of commerce. Under this test, if a patent claim is made that is directed toward a business or commercial objective in which the
only novelty is the application of a computer processor to speed the processing of information, the patent claim would per se fail.

II. WHAT IS A BUSINESS METHOD?

This Comment ultimately suggests a reborn "business method exception" to bar patents for software-based methods of doing business and thereby protect the vitality and economic efficiency of doing commerce on the Internet. The initial, and perhaps most difficult problem is defining the term "business method." As will be discussed in greater detail in the following section, recent case law has made patent protection available for any process claim that combines computer software with a computer processor to produce a "tangible" result of data.1 Thus, for example, the process of using a computer to calculate prices and carry out beer distribution may be patentable, even though it is nothing more than an improved version of the old paper-and-pen method.

To create a test that bars patents under certain circumstances but still serves the underlying policies of patent protection, the definition of "business method" must be clear and concrete. A line must be drawn that protects true innovation but bars the sequestering of tools other businesses need to operate.

Is a business method any activity that furthers commercial goals? If so, then the use of accounting programs, even word processing programs if properly applied, could be considered business methods. Certainly methods of advertising, taking and processing orders, creating products, and organizing logistics within a commercial enterprise are all, to some extent, business methods.

One scholar has defined a business method patent as requiring two key ingredients.2 The first ingredient requires that the end result of the process, or the product the "machine" produces, be of commer-

1. See State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998). This case is discussed at length in section III of this Comment, and was the pivotal decision that prompted a flurry of news reports and scholarly articles regarding the new world of patenting "business methods." Unfortunately, while the case holds that there is no bar to patenting "business methods," it claims to be unable to define the term. Id. at 1375 (noting "[a]pplication of this particular exception has always been preceded by a ruling based on some clearer concept. . ."). This Comment attempts to both define the term and create a test that would bar inappropriate patents.

2. Robert P. Merges, As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform, 14 BERKELEY TECH. L.J. 577, 579 n.5 (1999). As an example, Mr. Merges provides the text of U.S. Patent No. 5,797,127, the patent used by Priceline.com to prevent other on-line businesses from duplicating its buyer bid-driven airline ticket selling business. Id.
cial rather than technological interest. Typically, this would be the execution of a business process or the generation of information important to a commercial entity. Second, the hardware and software elements in the patent claims must be described generally enough that the real import of the patent claim is the underlying process. The intent of this requirement is that the novelty of the innovation does not derive from any specific advance in mechanical or software-based processes. The software is written in well-known code. The machine parts are common and used in other applications. The only novelty of the innovation is the fact that someone decided to use a computer to do the specific type of thinking.

The first ingredient is apt, and the second, if clarified, completes the description. If the novelty of the process was a machine, some new or improved gadget, then the patent would properly be granted for that machine and not its result. Eli Whitney’s invention was not seed-free cotton; seed-free cotton had been around for millennia. Eli Whitney’s invention was the machine that took the seeds and husks off the cotton without the investment of incredible time and effort.

Thus, the definition of business method this Comment offers is a process that is directed toward a business or commercial objective in which the only novelty is the application of a computer processor to speed the processing of information. Any specific improvements that utilize the capabilities of information technology to expand upon or add to a physical world equivalent would fall outside this definition and remain patentable.

III. THE DEVELOPMENT OF CASE LAW—GOTTSCHALK TO STATE STREET

Until 1998, the case law surrounding the patentability of software-based inventions was not clear. This uncertainty is often traced back to the 1972 Supreme Court holding in Gottschalk v. Benson. In

3. Id.
4. Id.
5. The somewhat ephemeral and often litigated limits of “patentable subject matter” are laid out in 35 U.S.C. § 101:

   Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

that case, Benson wanted to patent a method for converting binary-coded decimal numerals into pure binary numerals using a regular computer. In essence, the patent claimed a way of doing math problems, the product of which was numerical data.

Justice Douglas, writing for the Court, rejected the patent claim as containing nonstatutory subject matter, holding it to be nothing more than an idea. He noted such “abstract intellectual concepts” are merely tools to be used in scientific and technological work. Any patentable invention that might come from this discovery would have to apply this idea “to a new and useful end.” The Court also noted that the claimed formula had no application except when run in a computer; such “process” claims, when not tied to a machine, must transform or reduce an article to a different state or turn it into a different thing.

One logical reading of this case would be that computer programs, in and of themselves, are not patentable. However, this conclusion was not clearly articulated in the opinion. Thus, Gottschalk set the stage for a number of confusing decisions. Recently, Gottschalk has been read to mean nothing more than that mathematical algorithms (which constitute a computer program) are not patentable unless they are tied, in the patent application, to their use in a machine (i.e., a computer). This reading is buttressed by what is considered the bookend case to Gottschalk—Diamond v. Diehr.

In Diamond, the invention was a process for molding synthetic rubber. The process combined molds, temperature monitors, automated machinery, and a computer. Each element was standard for the industry. In this case, however, the computer constantly monitored the core temperature of the mold, recalcating the needed cure time,

---

7. Gottschalk, 409 U.S. at 64.
8. Id. at 67.
10. Id. at 70. “Transformation and reduction of an article to a different state or thing” is the clue to the patentability of a process claim that does not include particular machines.” Id.
11. See Wesley L. Austin, Software Patents, 7 TEX. INTELL. PROP. L.J. 225, 230 (1999). The Court’s statement that “if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself” was an unfortunate use of the term “algorithm.” It was unfortunate because all software can properly be referred to as different algorithms. Gottschalk should not be read as a rule that “algorithms” are not patentable. In light of recent case law, algorithms are patentable to the extent that they are not abstract ideas.
13. Id. at 177.
14. Id. at 179.
and automatically opened the molds when the cure was finished. The Court specifically noted that the patent application was not made invalid by the fact that several of the described steps relied upon a computer processing a mathematical equation. On the surface, this case held that a computer program may be given patent protection when it is incorporated into a manufacturing process that produces an improved product. However, the Court also put down a welcome mat for those who wished to seek patent protection for all software-based inventions.

Federal courts began upholding software-based patents as early as 1983. In Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc. (Paine Webber), Merrill Lynch, Pierce, Fenner & Smith, Inc. (Merrill Lynch) sought enforcement of its patent on an account management system. This system used a computer program to simultaneously track client funds in three different types of service accounts (a standard securities account, a money market account, and a charge/checking account). Similar accounts were offered by competing firms. The benefit of Merrill Lynch’s system was that it automatically reinvested daily dividends, which enabled “idle cash” sitting in a securities account to be invested in a money market fund.

Paine Webber sought declaratory relief, its sole claim on summary judgment being that Merrill Lynch’s patent did not contain 35 U.S.C. § 101 statutory subject matter and the patent was therefore invalid. Paine Webber claimed that in order to conceal the fact that the invention was a mere business system, the patent claims were drafted as “means” to perform a series of functions, and, therefore, the invention had no claim to being machinery, technology, process, manufacture or composition of matter under 35 U.S.C. § 101.

15. Id. at 178-79.
16. Id. at 185.
17. Austin, supra note 11, at 233.
19. Id. at 1361.
20. Id.
21. Id.
22. Id. at 1362.
23. Id. at 1365. Paine Webber’s lawyers did not seek to invalidate the patent under 35 U.S.C. § 102 and 35 U.S.C. § 103’s novelty and nonobviousness requirements, which may have been strong arguments given that the financial services being offered were common and the “invention” consisted, in effect, of a computer tying the accounts together. The court specified in a footnote that it was not deciding whether the claim would fall under these other provisions. Id.
24. Id. at 1365.
The court quickly drew a line in the sand, noting that the patent claims were not for the method steps themselves, but, rather, for the "apparatus," i.e., the means of performing certain tasks or steps.\footnote{25} Once this line was drawn, the court stated that although the patent "effectuates a highly useful business method and would be unpatentable if done by hand," the focus of the court's analysis would be on the operation of the program on the computer.\footnote{26}

The court found that the computer method passed the threshold requirement for 35 U.S.C. § 101 and denied the motion for summary judgment.\footnote{27} In other words, although Merrill Lynch could not have patented the abstract steps that the plan executed, by writing out the means by which the steps would be executed (i.e., tying the process to a machine—the computer), Merrill Lynch had, in effect, created a new "apparatus."\footnote{28} As a result, no one else could use a computer to execute those steps without a license. The case was subsequently settled before trial.\footnote{29}

Although case law over the following fifteen years did not clarify what a business method was or how patentable it may be,\footnote{30} the point was made moot by the Federal Circuit's\footnote{31} holding in State Street Bank \& Trust v. Signature Financial Group, Inc. (State Street).\footnote{32} There, the State Street Bank sought a declaratory judgment that a patent held by Signature Financial Group was unenforceable.\footnote{33} Signature Financial had created "hub and spoke" software to allow mutual funds (spokes) to pool their assets in a common investment portfolio (hub) that was formed as a partnership.\footnote{34} State Street, which also managed money for

\begin{footnotes}
\footnotetext[25]{Id.}
\footnotetext[26]{Id. at 1369.}
\footnotetext[27]{Id.}
\footnotetext[28]{See id. The court found Merrill Lynch's patent claims contained statutory subject matter because the claims allegedly taught a method of operation on a computer to effectuate a business activity. Id.}
\footnotetext[29]{Paul A. Beck, State Street Bank Case Causes Shock Waves in Banking and Financial Industry, 147 Pittsburgh Legal J. 7, 9 (1999).}
\footnotetext[30]{See, e.g., Ex parte Murray, 9 U.S.P.Q.2d 1819 (PBAI 1988) (denying patentability to an accounting method as a "method of doing business."); In re Grams, 12 U.S.P.Q.2d 1824 (Fed. Cir. 1989) (denying patentability to a method of testing a complex system to determine whether the system condition is normal or abnormal on the grounds that the invention consisted solely of an algorithm, deferring judgment on whether it would be invalid as a "method of doing business.").}
\footnotetext[31]{Note that although patent challenges may be tried in any district court with jurisdiction, 28 U.S.C. § 1338 (1994), the Federal Circuit is the proper court of appeal for all such cases. 28 U.S.C. § 1295 (1994). This court's holdings regarding patents may only be overturned by the Supreme Court or Congress.}
\footnotetext[32]{State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998).}
\footnotetext[33]{Id. at 1370.}
\footnotetext[34]{Id.}
\end{footnotes}
mutual funds, had originally attempted to license the software from Signature Financial, but, when the negotiations broke down, it sought legal protection to independently create a similar system.  

Looking to Signature Financial’s patent, the court held that what it protected was indeed a machine: the claim described a data processing system. However, the court noted that whether the claim was described as a machine or a process did not matter, as both are allowed under 35 U.S.C. § 101. The court then analyzed 35 U.S.C. § 101 itself. It noted that the repetitive use of the word “any” in the statute gave a clear signal that Congress intended the statute to be read broadly.  

Thus, because the machine, through a series of calculations, provided a definite share price and gave each mutual fund a daily update on the precise value of its assets in the hub, the machine produced a “useful, concrete and tangible result,” and was therefore patentable.  

The court did not stop there. It went on to explain that, under its interpretation of Diamond v. Diehr, although mathematical subject matter by itself is unpatentable as an abstract idea, it is only unpatentable so long as it is abstract. Once an idea is tied into a machine or process, it may become patentable. The court also implied that the “transformation” that must be wrought by the patentable machine or process need not be physical—the calculation of numbers to arrive at specified data is transformation enough.  

Finally, the court took the opportunity to put the sword to the often-mentioned, never defined, and judicially-created “business method” exception. This exception had been held out as a prohibi-

35. Id.  
36. Id. at 1372. The court stated claim 1, properly construed, claims a machine, namely, a data processing system for managing a financial services configuration of a portfolio established as a partnership, which machine is made up of, at the very least, the specific structures disclosed in the written description and corresponding to the means-plus-function elements . . . recited in the claim.  
37. Id.  
38. Id. at 1373.  
39. Id.  
40. Id. at n.4.  
41. Id. at 1373.  
42. Alter, supra note 6, at 26.  
43. State Street, 149 F.3d at 1375. The court specifically stated: Since its inception, the “business method” exception has merely represented the application of some general, but no longer acceptable legal principle, perhaps arising out of the “requirement for invention”—which was eliminated by § 103. Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.
tion against patenting anything that constituted a mere method of participating in commerce.\textsuperscript{44} The court noted that this exception had never been used by the Federal Circuit or its predecessor, the Court of Customs and Patent Claims, to invalidate any patent.\textsuperscript{45} Admitting that it could not define a "method of doing business," the court stated that the complexity of modern business systems caused any distinction between a business method and a means for carrying out such a method to "blur."\textsuperscript{46} The court then added that whether the claims of a patent are too broad to be patentable is not an issue under 35 U.S.C. § 101, but rather a question to be resolved under other sections of the Patent Act.\textsuperscript{47}

IV. PATENTING SOFTWARE-BASED METHODS OF DOING BUSINESS—THE STATE OF THE ART

It is widely believed that, with State Street, the Federal Circuit made patents a viable and sure way of protecting software.\textsuperscript{48} Where software was once suspect as mere mathematical formulas or abstract ideas, it is now patentable, so long as the patent claim ties the software to a computer and produces some "useful, concrete and tangible result."\textsuperscript{49} Most commercial software probably falls into this category.\textsuperscript{50}

\textsuperscript{44} See State St. Bank & Trust Co. v. Signature Fin. Group, 927 F. Supp. 502, 515 (D. Mass. 1996). Numerous patent treatises recite the long-established principle that "business ‘plans’ and ‘systems’ are not patentable, even though they may not be dependent upon the aesthetic, emotional, or judgmental reactions of a human." 1 DONALD S. CHISUM, PATENTS: A TREATISE ON THE LAW OF PATENTABILITY, VALIDITY AND INFRINGEMENT § 1.03[5] at 1-75 (1990); see also 1 ERNEST BAINBRIDGE LIPSCOMB III, WALKER ON PATENTS § 2:17 at 171 (3d ed. 1984) ("[A] ‘system’ or method of transacting business is not an ‘art,’ [i.e., process] nor does it come within any other designation or patentable subject matter ... apart from the physical means of conducting the system."); 1 PETER D. ROSENBURG, PATENT LAW FUNDAMENTALS § 6.02[3] at 6-82 (2d ed. 1995) ("Whereas an apparatus or system capable of performing a business function may comprise patentable subject matter, the law remains that a method of doing business whether or not generated by an apparatus or system does not constitute patentable subject matter."). Id.

\textsuperscript{45} State Street, 149 F.3d at 1375.

\textsuperscript{46} Id. at 1376, n.13.

\textsuperscript{47} Id. at 1377.

\textsuperscript{48} See Austin, supra note 11, at 250.

\textsuperscript{49} Mark C. Dukes et al., Software Patent Protection: State Street Puts Businesses on "Easy Street," 10 S.C. LAW. 32, 38 (1999). The examination guidelines of the Patent and Trademark Office require only that a computer-related process claim either "result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed" or known in the art, or that the claim "be limited by the language in the claim to a practical application within the technological arts." PAT. & TRADEMARK OFFICE, U.S. DEP’T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2106 (7th ed. 1998).

\textsuperscript{50} Alter, supra note 6, at 27.
The result of State Street is far-reaching. Patent protection should now be sought, as a matter of course, for any software application in the commercial fields. Any company desiring to create a computer application to aid its activities should have an infringement study done of existing patents.\(^\text{51}\)

Of course, the issuance of patents for software-based inventions is not a new phenomenon. Such patents were issued even before they were protected by State Street. It has been estimated that more than 1,000 patents have been issued for software-based inventions in the areas of business management, finance and accounting.\(^\text{52}\) But the floodgates holding back patent applications may have opened after State Street. During 1998 it was reported that there had been a 45% increase in approvals for data processing and computer related inventions,\(^\text{53}\) and numerous sources report a drastic increase in the number of applications.\(^\text{54}\)

So many patents have been awarded and so many more applied for that one author has suggested a comprehensive list of e-commerce patents would fill a book "and be out of date when arriving at the bookstore."\(^\text{55}\) Some of these patents clearly fall under this Comment’s business method definition, while others, not as obviously, have locked up preexisting tools for business, at least in an e-commerce setting. The following are some of the more notable examples:

- Microsoft has received a patent for a method and apparatus that maintains network communications on a computer capable of connecting to a wide area network (WAN) and local area network (LAN).\(^\text{56}\)

---

51. See Beck, supra note 29, at 10; see also Dukes et al., supra note 49, at 39 (noting protection should be considered "[i]f a software package has the potential to reap substantial commercial success . . ."). Also note that a patent must be sought within one year after the first sale or public disclosure, and filing should be completed before disclosure if international protection will be sought. See Dukes et al., supra note 49, at 39.


56. Austin, supra note 11, at 297.
• Amazon.com has patented a secure credit card processing system for book orders.\(^5\)\(^7\)
• Cybergold has patented a system of providing incentives for looking at internet ads.\(^5\)\(^8\)
• Priceline.com has patented a "reverse seller's auctions" process.\(^5\)\(^9\)

Of course, coupling the broad and wholly-exclusive nature of patent protection with the innovative and ever-changing world of software technology and e-commerce has created a world fraught with potential problems.

V. OTHER FORMS OF PROTECTION AVAILABLE TO E-COMMERCE INNOVATIONS

Because this Comment suggests amending the rules of patent law, thereby barring patent protection for some software business applications, it is important to survey other methods available to protect software-based innovations. This summary will explain what other tools are available and also look at what patent protection offers and why it has proven so attractive.

A. Copyright

Copyright protection automatically attaches to a creation so long as it is, to some small extent, creative and fixed in some sort of permanent medium. This includes computer discs and semiconductor chips.\(^6\)\(^0\) A copyright is comparatively easy and inexpensive to get, requiring only that the software have a minimum level of creativity.\(^6\)\(^1\) Copyright protection is also long-lived, extending for the life of the author plus 50 years, or, in the case of a work created by an employee during employment, for 75 years from the date of first publication or 100 years from creation, whichever is shorter.\(^6\)\(^2\)

Historically, copyright protection was the preferred method of protecting software innovations. Between 1972, when Gottschalk held that a mere procedure for solving a math problem was not patentable, and 1981, when Diamond allowed a patent for a rubber curing system whose chief innovation was the inclusion of computer control to a

---

58. Id.
59. Id.
62. Id. at 71.
known process, many software developers relied on copyright protection. In the 1980 amendments to the Copyright Act, Congress made it clear that copyright protection would attach to software because it could be considered a literary work.

Copyright protection of software has two chief drawbacks: (1) it is still unclear to what extent the organization underlying a computer application is protected, and (2) a copyright provides no protection against independent creations. The first issue, the scope of copyright protection, centers around what are termed "nonliteral elements" of a program. These are the functions of a program that are not embodied in the underlying code—the organizational structure, general flow charts, organization of intermodal relationships, parameters, macros and user interfaces.

A conflict arises because copyright law is designed to protect an individual's expression, not to prevent others from using the underlying or overarching themes and structure. However, with software, at some level the organization is integral to the expression. The key innovation of a computer program may well be the flow chart that allows the program to outperform its competitors, or the distinctive look and format of an operating system's display. Courts have recognized the importance of these types of innovations, and have, to varying degrees, extended protection to nonliteral elements.

A second and related problem is that, nonliteral elements aside, a copyright protects only the original work. Although the copyright holder retains exclusive right to copy and sell her work or to create

64. Ramos & Berlin, supra note 60, at 18.
65. Id. at 17.
67. Ramos & Berlin, supra note 60, at 17. For example, the story told in a romance novel would certainly be protected, while the underlying plot—Viscount meets feisty commoner, feisty commoner detects Viscount, melted by the feisty commoner's pure heart, the Viscount realizes the error of his ways, love ensues—would, unfortunately, not be limited to one work. Or a hundred thousand works for that matter.
68. See MacBlain, supra note 66, at 6-7.
69. The circuits are split on this issue. Compare Johnson Controls, Inc. v. Phoenix Control Sys., Inc., 886 F.2d 1173 (9th Cir. 1989) (holding nonliteral elements like structure, sequence, and organization are protected so long as the idea behind them has not merged with the expression used, i.e., if similar underlying code could produce the same effect, and the nonliteral elements are original, the nonliteral elements are protected), and Lotus Dev. Corp. v. Borland Int'l, 49 F.3d 807 (1st Cir. 1995), aff'd by an equally divided court, 516 U.S. 233 (1996) (holding menu command hierarchy in spreadsheet program is a "method of operation," and noncopyrightable under 35 U.S.C. § 102(b)).
70. Ramos & Berlin, supra note 60, at 17.
derivative works, she cannot prevent another from creating a substantially similar work.\textsuperscript{71}

This is classically illustrated in the "clean room" method of creating competing works. Because access and similarity are the key factors in proving copyright infringement, some companies will send programmers to a "clean room," with nothing except blank computer screens and a description of the tasks that the company wants a new program to achieve.\textsuperscript{72} This procedure helps to avoid copyright infringement since these programmers are without access to the original program.\textsuperscript{73}

In reality, "clean room" products are no different than generic novels. Romance novel publishers send out general plot formats to their authors. Each resulting work is distinct, yet eerily familiar. In the software context, were it not for the protection of the nonliteral aspects of the program, copyright would offer little protection in a world full of budding, creative, and well-paid software engineers.

\section*{B. Trade Secret}

Trade secret law offers tremendous protection, but it requires secrecy and diligence, which may not be attainable in a computer-based environment. Basically, any creation with commercial value remains a trade secret, so long as the creator does not tell others about his creation.\textsuperscript{74} A prime example of a trade secret is the formula for Coca-Cola. A trade secret need not be novel, creative, or have any deep thought involved.\textsuperscript{75} As long as a creation provides some sort of business advantage and is secret, it is protected.\textsuperscript{76} However, because a cause of action for violation of trade secrets will lie only when misappropriation of confidential information can be proved,\textsuperscript{77} employers must take active steps to prevent inadvertent or deliberate disclosure.\textsuperscript{78}

Typically, trade secrets are protected by nondisclosure agreements signed by employees\textsuperscript{79} and licensees.\textsuperscript{80} In the employment context, nondisclosure agreements are standard; before one gets a key to the lab or a password to the Windows creation rooms, one must sign a

\begin{itemize}
  \item \textsuperscript{71} Id.
  \item \textsuperscript{72} MacBlain, supra note 66, at 8.
  \item \textsuperscript{73} Id. See, e.g., Computer Assocs. Int'l., Inc. v. Altai, Inc., 982 F.2d 693 (2d Cir. 1992).
  \item \textsuperscript{74} Ramos & Berlin, supra note 60, at 17.
  \item \textsuperscript{75} Id.
  \item \textsuperscript{76} Id.
  \item \textsuperscript{77} Dukes, et al., supra note 49, at 34.
  \item \textsuperscript{78} Ramos & Berlin, supra note 60, at 18.
  \item \textsuperscript{79} Id. at 17.
  \item \textsuperscript{80} Id. at 20.
\end{itemize}
contract agreeing not to reveal any information learned while at work. In a licensing situation, the licensee agrees not to copy or otherwise replicate the information he or she is granted by the license.

The unique problem presented in providing trade secret protection for computer-based inventions is that such inventions necessarily go out into the world and are relatively simple to copy. Secrecy may be lost because of public access to an e-commerce website. It may also be lost because any process that is observable or inferable by the public is no longer a secret. Uncertainty is also a major drawback: one does not know whether a trade secret is indeed protected until one gets a judicial decision finding misappropriation of the secret. Until that order comes down, all of a software developer’s efforts could be for naught.

The computer industry has taken steps to preserve secrets by licensing commercial users and employing the clever, if invidious, shrink-wrap license for software applications. A foresighted lawyer realized that if copies of software were not sold, but instead licensed, then a person paying money would not be a purchaser, free to do what she willed with the program. Instead, as licensee, the person paying the money would only have the limited right to use the program. In the mass market software context, these shrink-wrap licenses specifically prohibit copying and reverse engineering. Therefore, anyone who has software is either a licensee and in the wrong if she attempts to break down or copy a program, or wrongfully in possession of the program. The circuits are split on the enforceability of shrink-wrap agreements, with a growing momentum toward finding them enforceable.

81. Id.
82. Id. at 16.
84. Id.
85. See id.
86. Ramos & Berlin, supra note 60, at 16.
87. Id.
88. Id. at 20-21. Reverse engineering means literally breaking down the 1s and 0s of the “object code” into a source code format, e.g., DOS. See id. at 20.
89. See Step-Saver Data Sys., Inc. v. Wyse Tech., 939 F.2d 91 (3d Cir. 1991) (holding UCC § 2-207 applies once an offer and acceptance have occurred, the appearance of a shrink-wrap license inside the container is an additional material term which is not included in the contract). But see Hill v. Gateway 2000, Inc. 105 F.3d 1147 (7th Cir. 1997) (finding arbitration clause and disclaimer of warranties included in shipped, and paid for, package binding because buyer did not return product within 30 days after reviewing the terms); Mortensen Co. v. Tim-berline Software, 93 Wash. App. 819, 970 P.2d 803 (1999) (holding contract formed after buyer receives the goods and opens the package, thereby being put on notice of the terms inside, and
The downside to trade secret protection, aside from the constant diligence required, is that reverse engineering is very difficult to prevent or control, and infringement is difficult to prove.90

C. Patent Protection

Patent protection is by far the most inclusive and expansive form of protection for a software-based innovation.91 A patent prevents anyone else from copying or utilizing an idea or invention that is incorporated in the patent.92 The patent holder is granted, in effect, a monopoly on the patented idea for twenty years from the date of application.93 Unlike copyright law, a patent holder may keep others from doing business in the area covered by the patent, and unlike trade secret law, the patent holder need not keep things to herself.94 Patent law prevents any sort of reverse-engineering, and it prohibits independent creations that mimic the patented material.95

The major advantages of patents, other than those enumerated above, are threefold. First, a patent is not based on expression, like copyright protection, so a software-based innovation primarily valued for the utilitarian function it serves can still get protection.96 An example of this idea is demonstrated by Priceline.com. Although a high school computer class might be able to write code to perform a “reverse auction,” it is prohibited from doing so by Priceline.com’s patent.

The second major advantage that patents offer is in licensing. Especially when compared to licensing trade secrets, a patent holder has a considerable advantage.97 While a trade secret holder must write foolproof nondisclosure agreements and has no actual enforceable interest until it is proved in court that what she holds is, in fact, a trade secret, a patent holder has a clearly enforceable right.98 A patent

---

90. Ramos & Berlin, supra note 60, at 22.
91. Id. at 21.
92. Id.
93. 35 U.S.C. § 154(a)(2) (1984). The “grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for patent was filed. . . . ” Id. 35 U.S.C. § 154(b)(1)(B) guarantees no more than three years wait for application review, with the patent term extended one day for each day over the three years the process takes. 35 U.S.C. § 154(b)(1)(B) (1984).
94. Ramos & Berlin, supra note 60, at 17.
95. Id. at 21.
96. MacBlain, supra note 66, at 36. Although a patent does provide protection to a software program that could easily be recreated independently under copyright law, whether it should be able to provide that protection will be discussed infra.
97. Melarti, supra note 54, at 389.
98. Choi, supra note 83, at 6.
holder can assert patent privileges against a miscreant licensee and need not worry that the licensee will pass information along to another. In that event, the patent holder would have a clear and strong cause of action against not only the miscreant licensee, but the recipient of the information as well.\footnote{See Melarti, supra note 54, at 389.}

The third advantage of patent protection is that it may protect future versions of the product.\footnote{Dukes, et al., supra note 49, at 39.} If the patent claims are drafted in sufficiently broad language, future versions of a software-based innovation will likely be protected under the same patent.\footnote{Id.} However, although copyright protection would require a separate copyright for a substantially changed subsequent work,\footnote{Id. at 34.} a copyright is so simple to get\footnote{Id. at 66.} that functionally there may be no distinct advantage.

Patent protection has drawbacks as well. The first and most onerous is simply the process of getting a patent. The application process can take years, during which time the potential patent holder is unsure of her rights and must rely on trade secret and copyright protection.\footnote{Ramos & Berlin, supra note 60, at 17.} Alternatively, a company with enough bombast may announce the patent pending, in hopes of increasing the company value or scaring off potential competitors.\footnote{Webcertificate.com has recently announced a patent pending for Internet gift certificates. See Berkowitz, supra note 55, at 665.} Second, a poorly drafted patent application may be too narrow to allow for sufficient protection of improvements, or too broad to be acceptable to the examiner.\footnote{See, e.g., Chris Oaks, Patent Seeks to Collect on Data (June 21, 2000) <http://www.wired.com/news/print/0,2194,37121,00.html> ("[Tim O'Reilly, a technology book publisher,] expects that [TeleDynamics'] patent will either be unenforceable as too broad, or not worth enforcing because it is too narrow.").} The denial of an application could lead to litigation.\footnote{Id.} Additionally, the patent application requires full disclosure of the invention, which becomes public knowledge when a patent is granted.\footnote{Ramos & Berlin, supra note 60, at 17.} Therefore the patent will offer absolutely no protection after the twenty-year period.\footnote{Id. at 21.} In an international scenario where a patent may not be enforceable, a patent-holder could immediately lose the exclusive right to an innovation.\footnote{Dukes et al., supra note 49, at 39.}
The last problem with patenting software innovations is that patents may not be suitable for products with a short life in the marketplace. Because of the time required to obtain a patent, a patent may be moot if a product will be obsolete before the PTO makes a decision.111

VI. THE MINEFIELD FACING INTERNET ENTREPRENEURS

The existing system of patent, copyright and trade secret law has developed over the centuries to protect industrial inventions and artistic works, and the technology of computer science has proven an "awkward fit."112 As the case law suggests, the court system has struggled in its attempts to integrate software and computer-based creations into intellectual property jurisprudence. By allowing patent rights to the algorithms and computer code that constitute the parts or steps of a patented process, access to the tools and building blocks of the growing software and e-commerce industry is being limited.113 Such a course is contrary to the policies at the heart of the Patent Act in that it sequesters those algorithms that do not advance the art of computing, thus hindering and discouraging further innovation.114

An additional problem is presented by the nature of the patent application process. Since patent prosecution is secret (i.e., there is no public disclosure until a patent is granted), there is no way a software developer or e-commerce entrepreneur can safely be assured that a new computer application or method of conducting business via computer does not infringe on a pending patent.115 The explosion of patent filings has replaced the free-wheeling, open access Internet marketplace with a "virtual minefield."116

This lack of certainty regarding the viability of a new idea may lead to three problems. First, after investing the money and effort to get a business off the ground or a software application to market, a developer may find that she is barred from the playing field, or at best required to pay licensing fees. Second, even if an entrepreneur believes she has not infringed, she may well have to bear the expense of a declaratory judgment action or other litigation before she can reap the rewards of her work.117 Third, it may be more difficult for a

111. Id.
113. Austin, supra note 11, at 226.
115. Melarti, supra note 54, at 390.
117. As a corollary to this, the potential damage judgments from patent infringement suits are staggering. It has been estimated that existing liability in the financial services field alone could exceed $2 billion. Seaberg, supra note 52, at 3. See also Ramos & Berlin, supra note 60, at
patentless entrepreneur to secure venture financing as more and more suits are brought for patent infringement. Venture capitalists look for some proprietary aspect of a business model—something that will ensure a guaranteed slice of the market—before investing. 118 A start-up’s value may be increased because of potential licensing fees from patents, and a company could also achieve favorable terms by providing security interests in its patents. 119 In any case, venture capitalists will undoubtedly factor this extra risk into the return they will expect. 120

An additional harm emerges from the break-neck speed at which the software and e-commerce fields are developing: any delay in getting an application to market or in getting an e-business on-line may make the product stale or allow competitors to establish an insurmountable market share. 121 A final threat to the vitality and growth of computer-based business is that, by allowing methods of doing business to be patented, the patent system effectively prevents, for some types of business, any competition (besides licensees) from developing. 122

The peculiar and nascent nature of the e-commerce industry may raise additional problems when parties attempt to resolve patent conflicts within the legal system. A first option to anyone threatened with an infringement action is to preemptively seek a declaratory judgment. 123 This tactic has become standard in order to avoid multiple actions and delays, as well as to achieve the obvious goal of ending uncertainty. 124 Although this may be an efficient way for massive industrial conglomerates to draw lines around the work their well-staffed research and development departments are producing, the cost and time involved in even a relatively small federal civil action may spell doom for small scale enterprises.

Even if one has the resources to fund a declaratory judgment action, there may still be rough water ahead. First, to establish juris-

---

22. (A jury awarded Stac Electronics $120 million after finding Microsoft had infringed Stac Electronic’s patent regarding data compression software. The case was settled after judgment.)


119. Choi, supra note 83, at 6-7.

120. Melarti, supra note 54, at 390-91.

121. For an informative discussion on reaching “critical mass” in the world of e-commerce, see LARRY DOWNES & CHUNKA MUI, UNLEASHING THE KILLER APP: DIGITAL STRATEGIES FOR MARKET DOMINANCE, ch. 2 (1998).

122. See Acquino, supra note 53, at 30 (quoting patent attorney Michael D. Stein).


124. Id.
dition, a declaratory plaintiff must show that an “actual controversy” exists. To show this, the declaratory plaintiff must show that (a) she holds a “recognized interest” in a patent that could be challenged for infringement, and (b) some other party has created a “reasonable apprehension” that it will bring such a suit. Second, the declaratory plaintiff must provide evidence, usually expert testimony, to convince a judge and possibly a jury, that her patent claim does not infringe or that the previous patent is invalid. This may be difficult to do, given increasingly complex technology.

Additionally, given the newness of the computer-based patents, the PTO itself may not be up to the task it is presented with. The PTO first determines whether a patent application is preempted by another patent and whether the application is novel and nonobvious. Because the PTO has a limited database of prior art in the software development area (both because of the novelty of the technology and because, until very recently, most software creators did not seek patents), it is extremely difficult for the examiners to judge what is novel and nonobvious. Some assert this lack of experience and resources has led to the improper approval of a large number of patents, leaving private parties to clean up the mess through litigation.

At least one scholar firmly advocates the application of patents to software-based innovations, suggesting the essential step in making the system work for these inventions is a major overhaul of the PTO. This Comment does not follow that line of reasoning; it

126. Fina Oil & Chemical Co. v. Ewen, 123 F. 3d 1466, 1471 (Fed. Cir. 1997).
127. In a patent infringement defense, the trial judge will construe the meanings and boundaries of all patent claims as a matter of law, leaving for the jury (if one is requested) only the decision of whether, under the claims as construed by the judge, there is infringement. Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). In a case for declaratory judgment, with no amount in controversy, the Seventh Amendment would not guarantee a jury trial, but counterclaims of a legal (rather than equitable) nature, such as claims for damages for infringement, would give the defendant (patentee) the right to demand a jury trial. U.S. CONST. amend. VII; Inland Steel Products Co. v. MPH Mfg. Corp., 25 F.R.D. 238, 126 U.S.P.Q. 109 (N.D. Ill. 1959).
128. James Pooley & Colleen Poiliot, Defensive Strategies in Software Litigation, 17 ACCA Docket 34, 37 (1999). This article highlights the difficulties of, and strategies for, convincing a judge to interpret claims in one’s favor and, in the case of an infringement claim defense made to a jury, also explaining the complex issues of infringement in a fashion that is clear to nontechnical jurors.
129. Ramos & Berlin, supra note 60, at 17.
130. Id. at 21; see also Carson & Nelson, supra note 118, at 197.
131. Pooley & Poiliot, supra note 128, at 34. These authors note that claims of infringement on improper patents can result in “bet the company” litigation. Id.
132. Merges, supra note 2, at 589. Mr. Merges eloquently asserts that business methods should not be deemed unpatentable, noting that “[j]ust because the end product of today’s engineering mind is manifested in a string of bits, it is no less a piece of ‘technology’ than practical
instead seeks legislation or a legal rule that will provide certainty without limiting the primordial soup of e-commerce creativity. Such a rule would simplify the task presented to the PTO and limit most litigation to those cases susceptible to summary judgment motions.

A final reason why this new technology taxes the patent system is the nature of the patent bar itself. When technically competent and legally astute persons are paid very well to push the envelope, they stretch the envelope to bursting.\(^\text{133}\) The claim in *State Street* was not earth shattering or new, but the clever wording of the patent claim that allowed it to fly in under the radar of § 101 was new, or at least different.

The state of the art in legal advice to e-commerce firms seems to be to “patent everything.” This strategy provides a firm with offensive weapons to stifle competition as well as a store of defensive weapons if infringement is asserted against the firm.\(^\text{134}\) A company’s own similar patents can be used in countersuits to create leverage for a favorable settlement or simply as a big stick to discourage potential litigants.\(^\text{135}\)

The litigation has already begun. The exemplar may be Priceline.com. The key to Priceline.com’s business model is the “reverse auction,” in which on-line purchasers list the goods they are interested in purchasing (primarily airline tickets, but the company has diversified into other services) and the price they are willing to pay.\(^\text{136}\) Priceline.com’s computer then relays the offer to various sellers.\(^\text{137}\) If the seller’s computer accepts, the buyer’s credit card is charged and the transaction is completed.\(^\text{138}\)

Priceline.com’s reverse auction sounds like a novel way of selling airline tickets, and, indeed, the company practices this reverse auction under a patent issued to Walker Digital, which was applied for in September of 1996.\(^\text{139}\) However, in April of 1995, inventor and patent attorney Thomas Woolston applied for a patent which he claims is substantially similar to Priceline.com’s.\(^\text{140}\) Due to the bureaucratic

---

133. *Id.*
135. *Id.*
137. *Id.*
138. *Id.*
140. *Id.*
vagaries of the patent application process, the patent that Priceline.com relies on was issued several months before Woolston’s.\(^{141}\)

Woolston first heard of Priceline.com when he heard a radio advertisement for the company.\(^{142}\) Anticipating the approval of his own patent, which would supercede the Priceline.com patent, he contacted Priceline.com and proposed some sort of cooperative venture.\(^{143}\) When Priceline.com balked, Woolston filed patent interference claims.\(^{144}\) As the litigation progresses, Priceline.com may find itself in the odd position of fighting to invalidate a patent very much like the one it holds, possibly on the basis that the patent is neither novel nor nonobvious. Of course, to do so would be to damn its own patent, but with its well-established market niche, Priceline.com should survive that scenario. A massive damages award in Woolston’s favor, however, might prove less survivable.

Another newsworthy case involves E-Data, Inc., which has stirred up a storm by buying a patent and vigorously litigating to squeeze licensing fees out of companies it feels are infringing.\(^{145}\) The patent E-Data bought covers a noninternet-reliant ordering system for compact discs.\(^{146}\) The system is designed so that record stores can reduce inventory and instead order electronically from a distribution facility that stores the music in data form and downloads it onto discs on demand, which are immediately shipped.\(^{147}\) E-Data claims that this patent covers the process of downloading software from the Internet.\(^{148}\) So far, none of its suits have been successful.\(^{149}\)

More recently, a battle has erupted between on-line superpowers Amazon.com and Barnesandnoble.com. Amazon.com received a patent for a “one-click” ordering system by which a customer can purchase an item by simply clicking the mouse button once, so long as the merchant already has the pertinent ordering information, including credit card numbers, in its computer’s memory.\(^{150}\) As the 1999 Christmas shopping season approached, Barnesandnoble.com began

\(^{141}\) Id.

\(^{142}\) Id.

\(^{143}\) Id.


\(^{145}\) Berkowitz, supra note 55, at 667.

\(^{146}\) Id. at 668.

\(^{147}\) Id.

\(^{148}\) Id.

\(^{149}\) Id.

offering an "Express Checkout" one-click ordering service.\textsuperscript{151} A suit was filed, and after a five-day hearing the Federal District Court for the Western District of Washington issued an injunction barring Barnesandnoble.com from offering this feature pending outcome of the suit.\textsuperscript{152} After hearing testimony from experts in the retail and technology sides of electronic commerce, the court declined to accept Barnesandnoble.com's assertion that the patented feature was obvious or anticipated by prior art.\textsuperscript{153} Barnesandnoble.com has appealed this decision to the Ninth Circuit.\textsuperscript{154} As this Comment was written, numerous additional cases were being filed.\textsuperscript{155}

\begin{footnotesize}
\begin{enumerate}
\item[151.] Berkowitz, \textit{supra} note 55, at 668-69.
\item[152.] \textit{Id.}
\item[153.] \textit{Id.}
\item[154.] \textit{Id.}
\item[155.] The following are a few such cases: Expedia, Microsoft's travel service, has been sued by Priceline.com for patent infringement over an Internet-based hotel price matching service. \textit{Expedia makes motion to dismiss Priceline patent suit} (Dec. 21, 1999) \texttt{<http://news.cnet.com/news/0-1007-202-1501991.html>}. Expedia has responded with a motion to dismiss, challenging whether Priceline.com actually owns the patent in question and pointing to the pending suits of two other companies (Marketel and Aden Enterprises) that challenge the patent. \textit{Id.}

After DoubleClick, a company involved with Internet advertising, sued Internet ad company L90 for patent infringement, L90 responded with a countersuit alleging unfair business practices and fraudulent patent assertion. Sandeep Junnarka, \textit{Marketing Rival Sues to Quash DoubleClick Patent} (May 18, 2000) \texttt{<http://news.cnet.com/news/0-1005-200-1894013.html?tag=st.ne.1005.thed.ni>}. L90 is alleging that the patent at issue covers longstanding standard business practices that were common before the patent application, and that DoubleClick did not properly reveal this "prior art" in its application. \textit{Id.}

TeleDynamics, a small company based in Florida, is claiming a new patent issued to it, which covers "interactive lead generation," will require any Internet, telephone, or wireless web service that gathers information about users and passes it along to a third party to obtain a license from TeleDynamics. Oaks, \textit{supra} note 106. Monte Sims, chief executive officer at TeleDynamics, has stated that most information services involved in the Internet, wireless communications, and 800-number industries will be required to obtain a license. \textit{Id.}

British Telecommunications has asked seventeen Internet service providers in the United States to pay fees relating to a 1976 patent that it claims covers the "hyperlink" process of connecting on-line documents. \textit{British Firm Demands Fees for Hyperlink Patent} (Jun. 20, 2000) \texttt{<http://news.cnet.com/news/0-1005-2115385.html>}. The process was apparently invented by a British Telecommunications employee, but rights in other countries have expired. \textit{Id.}

Phone.com recently filed suit challenging the validity of a Geoworks patent that covers "flexible user interface technology" used to link wireless devices to the world-wide web. Craig Bicknell, \textit{Patent Hangs Up Phone.com} (Apr. 26, 2000) \texttt{<http://www.wired.com/news/print/0,1294,35925,00.html>}. Geoworks claims that a number of other companies, including Toshiba, have paid its licensing fees, and has expressed disappointment that Phone.com "favors litigation over the widely accepted business solution of licensing." \textit{Id.}

Because this pattern of suit, countersuit has become so common among high-tech businesses, industry experts have coined a name for the phenomena: "Mutually Assured Crop," taken off from the Cold War's "mutually assured destruction." \textit{Id.}
\end{enumerate}
\end{footnotesize}
VII. CONCLUSIONS: BRING OUT YOUR DEAD: DEFINING, THEN REANIMATING THE BUSINESS METHOD EXCEPTION

Because of the imperfect protection offered to software-based inventions by copyright and trade secret protection, it makes sense to allow patent protection to those innovations that achieve new heights in technology. The problem is where to draw the line. The State Street court studiously avoided drawing such a line. Instead, the court opened up a world of unlimited possession to anyone quick enough to take a business method and put it to use via computer software before anyone else. Like the Oklahoma land rush, each fertile plot of the e-commerce world is distributed by the PTO to the person quick enough to get there first, leaving nothing for those who follow. Now the fields are largely distributed, and the bloody fights over the borders have begun. The author of this Comment hopes that through legislative or judicial intervention, the possibilities of this new economic frontier will again be opened to all.

Neither State Street’s nor Priceline.com’s “inventions” involve any advance in technology. In fact, they are not inventions, but rather, applications of known machines doing normal tasks faster. The inventor of the washing machine patented his new machine, not the concept of using a common mechanism to wash clothes with less effort. Before the State Street and Priceline.com patents were issued, mutual funds had formed partnerships for economy of scale and tax advantage, and buyers had made lowball offers. Neither State Street nor Priceline.com invented these concepts.

If the novelty of a process is the software itself—some technological advance in computing—then certainly a patent is the proper way to protect this important contribution to technology. Unfortunately, my research did not reveal a patent directed at a business process that fits this description. Any advance in computer technology that does something that has not been done before would be, in and of itself, novel, independent of any projected use of the process.

The upsurge in patent claims relies upon programming that can be readily duplicated by competent people in a “clean room” scenario. The importance of this is not that these claims are unsuitable for copyright protection, but rather that underneath the claim is computer code, which is nothing but a scrivener’s art. Perhaps it is a brilliant art, but programmers write code using an established computer language, which, in turn, tells the computer what to do via a string of 1s and 0s. Programmers write a recipe, the computer follows the direc-

156. This latter process is better known as “haggling,” or negotiating a deal.
tions and spits out a number or tells a synthetic rubber mold to deactivate and open. The underlying product is the coded instructions of a programmer, a software engineer's art.

There have been a number of suggestions regarding how to protect the patent system from misuse. The first and strongest argument, hinted at by the State Street court, relies upon the necessary criteria of novelty and nonobviousness to knock out meritless patents and patent claims. Unfortunately, as discussed above, the dearth of patented software makes this option next to impossible. These patentability issues will only come up later, in litigation, if the "infringer" has the financial backing to defend herself or seek a declaratory judgment.

Just as likely, the "infringer" will settle, quit, pay licensing fees, threaten to countersue over her own, possibly similar patents, or avoid going into the business in the first place. The result need not be elaborated: wasted money, wasted time, wasted effort, and massive discouragement to those without the resources and legal savvy to work the system in their favor. Although novelty and nonobviousness will remain integral standards for judging patent applications, they will provide little help in the world of e-commerce.

Another proposal is to introduce the concept of computational complexity into the patent infringement analysis. This Comment takes as a basic premise that State Street has "opened the § 101 floodgates," and from there develops a test that would narrow the scope of patent protection by providing protection only to those patents that demonstrate a level of computational complexity higher than previous art. This would serve the dual purpose of filtering out a vast majority of "business method" claims, which do not rely on software innovation, while at the same time providing protection and profit for those great minds who can make a computer do things not before possible.

A possible and believable end result of this test is the stimulation of software development that can keep pace with the developments currently being made in computer hardware. Presumably, this test would have knocked out both State Street's and Priceline.com's patents because neither claim was based on any advancement in the world of software technology.

The downside of a computational complexity test is that it is not easily applied. There is no way that a PTO examiner, no matter how

157. See Chin, supra note 114, at 17. This article is a well-developed and thoroughly thought-out analysis of both the substantive law in the area and the policy issues involved.
158. Id. at 19.
159. Id. at 17.
skilled, will be versed in the depth of computer knowledge necessary to make this sort of judgment. The few people competent to testify as expert witnesses to such a development are working for software developers for high salaries, or for the National Security Agency. Whether or not the technology has been expanded will ultimately become a matter resolvable only through litigation.

A secondary problem is that if a technological advance, even a legitimate one, was couched in a program that performed a business method on the Internet, we would be back at stage one. An attempt to duplicate the type of service with other software would infringe the patent, and the cycle of litigation, licensing, and discouragement would begin again. The computational complexity test is an intellectual success, but it leaves breath in the specter of patented business methods.

The most recent movement in patent reform is headed by Jeff Bezos, Chief Executive Officer of Amazon.com. Responding to rampant criticism to the patents his company holds, as well as the enforcement of those patents, most notably against Barnesandnoble.com, Mr. Bezos has posted an open letter on the Amazon.com website calling for patent reform.\textsuperscript{160} Specifically, Mr. Bezos wants Congress to pass legislation reducing the life of a software/business model patent from twenty to three years. He also suggests a citizen review of all patent applications before approval.\textsuperscript{161}

Although Mr. Bezos' suggestions are sweeping and would constitute a definite improvement, they only reduce, rather than eliminate, the inherent problems. In the fecund environment of the Internet, businesses live and die in moments, hence the slang phrase "Internet time." The reality of the market is that a three-year delay in launching a company may make it impossible to gain market share without a tremendous investment because consumers will go to an established, trusted business.\textsuperscript{162}

This Comment proposes a slightly different, simpler approach to this problem. If a patent claim is made that is directed toward a business or commercial objective, in which the only novelty is the application of a computer processor to speed the processing of information, the patent claim should fail per se. If a patent claim is directed toward business ends but creates a virtual service or apparatus that is a manifestation of a physical equivalent known in the world of nonelec-

\begin{footnotes}
\item[161] Id.
\item[162] See generally, DOWNES & MUI, supra note 121.
\end{footnotes}
tronic commerce, the underlying idea would not be patentable. Any specific improvements made that utilize the capabilities of information technology to expand upon or add to the physical world equivalent should be patentable.163 The problem of discouraging businesses like Beer2U.com will linger unless patents that block off the use of key business processes are prevented altogether.164

Extending patent protection to a programmer’s code simply because it is tied to a computer and turns out “useful” information is akin to extending patent protection to recipe books if they are tied in a patent claim to a competent chef and the ingredients to make soup. Goodness knows, there are a hundred-thousand ways to make soup, and on a cold day most of us would describe the output as “useful,” but this is hardly adding anything uniquely valuable to the world of cuisine. Similarly, a thousand computer programmers could devise a thousand different programs to calculate the value of a mutual fund’s contribution to an investment partnership, and yet, under the current system, the first one through the door is given the exclusive right, for twenty years, to do so.

If a program is great but not patentable under this Comment’s proposed test, it could still be marketed and sold under protection of copyright. Perhaps it will be the equivalent of the Betty Crocker Cookbook and make its creator money for decades. Or, if it is not ideal, someone else can improve upon the idea and profit from the innovation.

This proposed test would prevent the de facto award of a monopoly to the creator of the first program in a given area of business. From a public policy standpoint, this result would be beneficial as well: a patent holder currently has little incentive to optimize the use of her patent, so there can be no competition. Under the proposed test, hundreds of potential competitors could work to make improvements on an idea, or to tailor the idea to specialty markets, and the public would have the maximum possibility of finding the best possible product for its use.

An additional benefit of the proposed test would be a lower litigation burden. Unless true and legitimate technological advances

163. Thus, it is quite possible that Amazon.com’s “one-click” ordering system, discussed supra, would indeed be patentable. Although there are express lanes in supermarkets, there is nothing that allows one to walk into a store, point at something on a shelf and have it instantly en route to one’s home, no further questions asked.

164. This problem, bundling ordinary business methods together with technological advances to sequester both the advance and common method, was deliberately ignored by the State Street court, which noted: “It is irrelevant that a claim may contain, as part of the whole, subject matter which [sic] would not be patentable by itself.” State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 1375 n.6 (Fed. Cir. 1998).
were argued, cases could be decided on a motion for summary judgment. Admittedly, this might decrease the market for patent lawyers, but at this nascent stage in the development of the field of e-commerce patents, it would probably not put many out of work.

Narrowing patent protection in a specific field to ensure access to the tools of intellectual property is not something unknown to Congress, as is evidenced by the fact that Congress recently passed legislation making patents for surgical processes per se invalid. Such a reading is also not inconsistent with Supreme Court precedent, and in fact coincides with the policy underpinning *Gottschalk v. Benson*—the 1s and 0s are not the novel, wonderful thing we wish to encourage and protect. The novel and wonderful thing we wish to encourage and protect is the creation of new technology, not the recasting of known technology to fit a new market.

---

165. *Melarti*, supra note 54, at 392. The public policy reasons for denying patent protection to surgical procedures (lowering healthcare costs and ensuring availability of health care to all) are obviously qualitatively different from those implicated by software-based business method patents (lowering barriers to entry into the electronic marketplace, preventing monetary enrichment out of proportion to contributions to technology and the useful arts). The key point is that Congress has the tools to make a social policy response to problems presented in the patent régime.